

SERVICE BROCHURE

Tailor-made service for efficient biogas plants



**Technical and
biological service:**

With us, your plant
can also achieve
its maximum
performance.

OUR SERVICES AT A GLANCE

1 Entire plant

- Overall technical and biological optimisation/support
- Conversions and extensions
- Operational management
- Regular maintenance
- Design/approval
- Recurring inspections and documentation support

2 Raw materials/silo

- Raw material management
- Evaluation of feedstocks
- Silo extension
- Determination of DM/DMorg
- Fermentation tests/NIRS
- Silage quality

3 Charging

- Modernisation and optimisation:
 - Technical process
 - Biological process
 - Energy usage
- Help with process disruptions
- Operating resources

**4 Digester**

- Review and optimisation of agitator technology
- Gas tank replacement/management
- Concrete dome renovation
- Waste water analytics
- Process analytics

5 CHP unit/technology centre

- Regular maintenance
- Greater flexibility
- Biogas cleaning
- Heat utilisation/concept
- Gas conditioning

6 Fermentation residue store

- Modernisation and new build
- Fermentation residue analytics
- Fertiliser value (DüMV)
- Determination of heavy metals (BioAbfV)
- Fermentation residue treatment
- Fermentation residue management

Schmack Biogas Service – from analytics to a complete overhaul

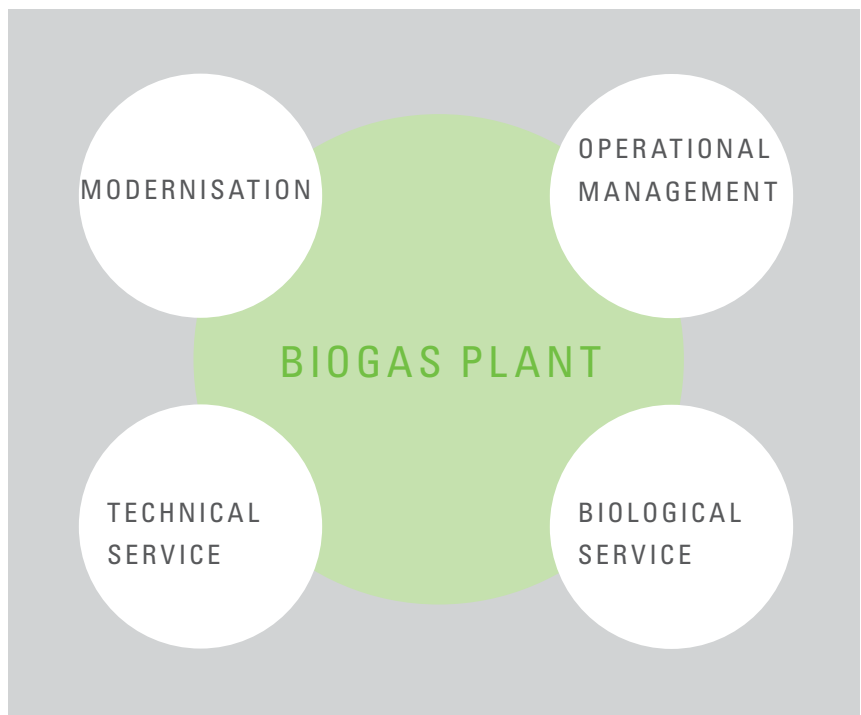
From technical and biological service to operational management and a complete modernisation of your plant: Schmack Biogas Service offers a comprehensive service package tailored to your individual needs. With our many years of experience in all aspects of biogas plants, we provide you with exhaustive and competent advice.

Whether farmers, municipal services or power supply utilities: operators can select the exact modules from the Schmack service concept that best meet their needs and requirements. Our service network of specialised employees is always at your side with advice and assistance.

As one of the leading German suppliers in the biogas sector, Schmack has received multiple awards for its innovative technologies and processes. Numerous certificates demonstrate the high quality of our products and services.

Schmack Biogas Service is a company of the Viessmann Group.

Benefit from Schmack's service competence to ensure that your plant will continue to run economically, safely and efficiently for many years to come.



SCHMACK SERVICE EXPERTISE



Modified to be fit for the future

Whether contractual or unscheduled work –
you can rely on our service.

Shape up your biogas plant!

Biogas plants are subject to wear and tear and, like all energy generation plants, are designed for a certain service life. In order to continue to operate older plants economically, proactive planning of modernisation projects is essential.

Often even minor conversion work or modifications to the biological, technical and organisational areas are sufficient to increase overall efficiency.

The possibilities vary from plant to plant. This is why the Schmack Biogas Service team will work with you to develop an individual optimisation concept for your plant. For a meaningful cost/benefit analysis, the untapped potential of the biogas plant is determined and comprehensive solutions are developed. When reviewing your processes, we draw on over 20 years of expertise.

The replacement of old components with new, more powerful and energy efficient ones is playing an increasingly important role in plant modernisation. We will show you which new products are on the market and which components are best suited to you. We exclusively use components that have been developed in-house or high quality components from renowned manufacturers.

Of course, in addition to delivery and installation, we also provide complete integration, including commissioning.



Installation of new, more powerful components

OUR SERVICES IN DETAIL

- Technical and commercial optimisation
 - Weak point analysis
 - Determination of process-related KPIs
 - Development of an optimisation concept
- Design/approval
- Modification/upgrade
- Extensions/conversion

TAKE ADVANTAGE OF THESE BENEFITS

- + Individual modernisation concept – tailored to your plant – to optimise performance and yield
- + Compliance with all operational safety regulations
- + Extension of the lifecycle of your plant
- + Increased profit through improved efficiency

Better performance, higher efficiency, greater yield in the long term

Technical service: your plant in good hands

Even the best system technology cannot do without servicing and maintenance!



Whether contractual or unscheduled work – you can rely on our service team



Regular inspections ensure reliable plant operation

OUR SERVICES IN DETAIL

- Regular servicing/maintenance
- Recurring tests
- Revision
- Replacement of individual components
- Procurement of spare and wear parts

TAKE ADVANTAGE OF THESE BENEFITS

- + High system availability
- + Avoidance of downtimes
- + Maintaining operational reliability

If you do not want to leave anything to chance in the operation of your biogas plant, it is best to conclude a regular maintenance contract with us.

Within the scope of this contract, the technical condition of your plant is checked by specialists at regular intervals. Technical faults and risks are detected at once and can be remedied immediately without long downtimes. In addition, we take care of the design, control and coordination, as well as the necessary materials planning.

Depending on your requirements, you can conclude a regular maintenance contract for the entire biogas plant or only for individual areas.

From engine oil analytics to major repairs, from maintenance work to a complete overhaul, you can rely on the experience and expertise of our service technicians and partners. We work with you to achieve a high technical performance level for your biogas plant – and smooth operation.

If components are worn, we supply the necessary spare parts – quickly and cost effectively.

Control is good, EUVIS remote monitoring is better



EUVIS control centre

The EUVIS remote monitoring system offers you high plant reliability around the clock.

As the operator of a biogas plant, you usually have more important things to do than constantly monitor its performance level. This can be done by the EUVIS control centre from Schmack.

It is manned by our employees 24 hours a day, 365 days a year, to remotely monitor your biogas plant. They supervise all relevant figures and parameters of the biogas process. On the basis of these individual values and by comparing them with other systems in our data pool, we can detect irregularities in operation at an early stage and react quickly to any fluctuations in performance.

Stepping in and taking action before it's too late

With the team from EUVIS, you can be sure that your biogas plant will run reliably at a high capacity utilisation rate.

OUR SERVICES IN DETAIL

- Continuous monitoring 24 hours a day, 365 days a year
- Seamless recording of all process-related data such as gas quality, quantity and pressure, as well as temperature and fill level
- Staff available around the clock for fault analysis and troubleshooting

TAKE ADVANTAGE OF THESE BENEFITS

- + Early detection of process disruptions
- + Short response times
- + Avoidance of long downtimes
- + High system availability



Determination of the dry matter content of substrates and digester contents



* Only applies to the test procedures listed in the accreditation certificate.

With our comprehensive analytics, we ensure an optimum fermentation process.

In addition to safe and reliable plant technology, a stable fermentation process is an essential factor in the profitability of your biogas plant.

To achieve this, our accredited* in-house laboratory offers comprehensive analytics for biogas plants: from the evaluation of different feedstocks to fermentation process control and assessment of the fermentation residue.

With our advanced analytical instruments and methods, we provide you with fast and reliable results on the current fermentation process and the most important process variables. Using this data, our specialists will make recommendations for improving the processes. Together, we will ensure stable and economical plant operation.

OUR SERVICES IN DETAIL

Evaluation of feedstocks

- Gas yield, silage quality, dry matter, etc.

Process assessment

- Fatty acid spectrum
- Inhibitors
- Trace element concentration
- Experience from more than 75,000 process analyses

Analysis of fermentation residues

- Nutrient analytics
- Analytics and sampling as per the German Ordinance on Biowastes (BioAbfV) and of sewage sludge as per the German Sewage Sludge Ordinance (AbfKlärV)
- Analytics within the framework of the German Cultural Landscape Programme (KULAP) and for RAL quality assurance of fermentation products
- Environmental and water analytics

TAKE ADVANTAGE OF THESE BENEFITS

- + High stability of the fermentation process
- + Economically reliable operation
- + Monitoring of fermentation processes – immediate assistance and optimisation as required

Analytics, evaluation, optimisation – everything from a single source

A good fermentation process begins in the laboratory

Benefit from the experience and expertise of our scientific staff, which has been amassed over more than 20 years. You can choose between different levels of support. No matter whether you opt for an initial biological consultation, advice on process disruptions or complete support by "Fit for Biogas", our specialists are always there for you.

Discover the potential of your biogas plant with us

You will receive specific, sound advice at any time on any biological questions you may have. Based on our analyses and recommendations, you will know exactly what needs to be done to increase the yield from your plant.

In addition, we deal with all the documentation for you – as required by the respective network operator.

Digester additives to improve the fermentation process

Only the right additives can help the fermentation process to run constantly at the highest level. Our special products such as novoDYN® trace element mixture, trace element pure salts, iron preparations and METHANOS®, aid your plant to achieve its optimum performance.

For the prevention of specific deposits and the resulting consequences, we can recommend our product RockAway.



Preparing a sample for trace element analytics

From initial consultation to complete "Fit for Biogas" support – we have the right package for you.

OUR SERVICES IN DETAIL

- Process analytics/process assessment
- Interpretation of analysis results
- Feeding recommendation
- On-site support and advice
- Monitoring as required
- Reports and short surveys
- Contract options tailored to your needs

TAKE ADVANTAGE OF THESE BENEFITS

- + High plant capacity utilisation
- + Stabilisation of process biology
- + Seamless documentation of the fermentation process
- + Compliance with regulations, directives and legislation

Get in touch – we will be happy to advise you!

The all-inclusive service for your biogas plant

Complete operational management from a single source

Would you like to keep the work involved with the biogas plant to a minimum? No problem: With our all-inclusive service, we provide you with complete operational management, including administrative tasks.

Put your biogas plant in professional hands

The sum of the operating costs is the most important factor for the profitability of your biogas plant. Don't leave it to chance – put your plant in the hands of our trained specialists. The all-inclusive service guarantees you optimum process conditions and maximum operational reliability. As a result, you can benefit from over 20 years of biogas experience. We take care of the technical and biological management of your plant, including remote monitoring, maintenance measures and raw material procurement.

Our services

- Technical operational management and coordination of plant operation
- Proactive maintenance (incl. stocking spare and wearing parts)
- Biological support (analytics, trace elements and feeding schedules)
- Quality, safety and document management (organisation and monitoring of recurring inspections)
- Process optimisation (recommendations for conversions, extensions and new statutory remuneration schemes)
- Raw material and fermentation residue management

Calculable raw material costs through sustainable cultivation

The raw material costs are an important parameter for the success of your biogas plant. This is why Schmack has its own raw materials department.



Together with the growers, our specialists develop individual, sustainable crop rotation concepts for optimised land use. They coordinate all activities right from the procurement of raw materials through to harvesting, preservation and fermentation residue spreading.

We aim to achieve low raw material costs with simultaneous preservation of biodiversity and water protection, as well as considering alternative energy crops.

Our services

- Cultivation advice and crop rotation optimisation
- Substrate and raw material management (incl. conclusion of supply contracts, logistics concepts and harvest organisation)



Compaction of the delivered regenerative raw materials

TAKE ADVANTAGE OF THESE BENEFITS

- + Calculable operating costs due to proactive plant operation
- + Optimum plant operation
- + Team of experts with many years of experience in plant management and an extensive service network
- + Long term limitation of operating costs through comprehensive, proactive plant management, from the procurement of raw materials to optimised plant operation and fermentation residue spreading

Benefit from our many years of experience and the competences we offer in operational management.

Always there for you with our customised service



From the regular inspection of individual components or the entire plant through to a service contract, Schmack Biogas Service GmbH offers you customised solutions to suit your requirements. The services we offer you are based on a modular concept.

Of course, you can commission all other services that are not covered by your contract separately, as and when required. In order to ensure optimum operation of your plant, our service team is always at your side with advice and assistance.

TAKE ADVANTAGE OF THESE BENEFITS

- + 24/7 service hotline
- + More than 50 specialists
- + Active throughout Germany
- + Extensive stock of spare parts

Contact to our customers and fast availability are important to us.

24/7 service hotline:

+49 9431 751-277

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